

BULLETIN OF THE

TAYLOR SOCIETY

AN INTERNATIONAL SOCIETY TO PROMOTE THE SCIENCE
AND THE ART OF ADMINISTRATION AND OF MANAGEMENT



Book Review Number

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Objects of the Taylor Society Incorporated

The objects of this Society are, through research, discussion, publication and other appropriate means:

1. To secure—for the common benefit of the community, the worker, the manager and the employer—understanding and intelligent direction of the principles of administration and management which govern organized effort for accomplishing industrial and other social purposes.
2. To secure the gradual elimination of unnecessary effort and of unduly burdensome toil in the accomplishment of the work of the world.
3. To promote the scientific study and teaching of the principles governing organized effort, and of the mechanisms of their adaptations and application under varying and changing conditions.
4. To promote general recognition of the fact that the evaluation and application of these principles and mechanisms are the mutual concern of the community, the worker, the manager and the employer.
5. To inspire in labor, manager and employer a constant adherence to the highest ethical conception of their individual and collective responsibility.

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Contents

In view of the fact that many of our readers
are away from their desks during August we
have taken the opportunity to issue a vacation
Bulletin in the form of a "Book Review Num-
ber." Our book review space is normally so
limited that we get behind in our appraisal of
important books. This issue will bring our
readers up to date on a number of books of
varied but pertinent subject matter.

Coming Meetings

About November 10, 1932

For a date early in November the Taylor Society
plans to join with the American Academy of Political
and Social Science in a two-day convention to be held
in Philadelphia. The emphasis at this convention will
be on problems of stabilization of industry, probably
under the general title, "What Should the Party in
Power Do?"

December 7-9, 1932

The regular Annual Meeting of the Taylor Society
to be held December 7-9 will be a joint meeting with
the Society of Industrial Engineers. At this meeting
the emphasis will be on management in the individual
enterprise—production, marketing and general admin-
istration.

Reviews

*A History of Science, and Its Relation with Philosophy
and Religion.* By W. C. Dampier Dampier-
Whetham, The Macmillan Company, New York,
1930, pages xxi, 514.

Reason and Nature. An Essay on the Meaning of the
Scientific Method. By Morris R. Cohen, Har-
court, Brace & Company, New York, 1931, pages
xxiv, 470.

Science and First Principles. By F. S. C. Northrop,
The Macmillan Company, New York, 1931, pages
xiv, 299.

The Adventure of Science. By Benjamin Ginzburg,
Simon & Schuster, New York, 1930, pages xiv,
487.

Builders of Delusion. By Henshaw Ward, The Bobbs-
Merrill Company, Indianapolis, 1931, pages 381.

Human Values. By Dewitt H. Parker, Harper &
Brothers, New York, 1931, pages viii, 415.

What is science? What is its relation to philosophy and
religion? What is the scientific method? What is the
role of and what the limits upon reasoning? Do the most
recent scientific findings alter the outlook which we should
intelligently have on the universe?

It is questions like these which, despite their abstract
sound, are at the core of all the serious thinking of our
day. However sterile the world of philosophic thought
may casually seem on the surface, there is in fact a pro-
found agitation beneath, of which these few books out of
scores in the last few years, are the outward sign. And
everyone who enjoys the excitement and zest of intellectual
mastery and awareness can find great stimulation and
satisfaction in these vital stirrings of the world of thought.

It may be hard to dramatize the personal and social
implications of these philosophic issues; but they are abun-
dantly there. And for the reader with any imagination
such books as these are as exciting as the opening of a
door out upon a hitherto unknown world. In a real sense
it is in fact a new world of attitude, promise and poten-
tiality for control, which they by implication project. And
anyone who would share in the unprecedented experience
of realizing the character of the world's possible future
has a rich treat in such superficially "dry" documents as
these.

One general idea, by no means new to the experts, which
constantly emerges is that science is essentially instru-
mental in character. It is not an ultimate, nor a whole
philosophy of life. It is a way of analysis, a method to
facilitate an effective and orderly grappling with reality
in an effort to understand and control it. It is a method
of study, not a way of life, although it can conceivably
throw light on a way of life.

As such it has no answer of itself to questions of mech-
anism versus vitalism, determinism versus free will, and

the like. Its role is not to derive meanings but to describe processes. Meanings are derived in experience; values are lived—or lost. The process can be examined, and that is science.

Nor is this a role of secondary importance. It is rather a case of recognizing, for example, the difference between the doctor as with clinical thermometer and other apparatus he diagnoses an ailment and the doctor as a heartening bearer of confidence with a kindly eye and a firm, warm handshake as he greets the patient. Both experiences are facts; one in the area of analysis and method, the other in the area of direct experience. Perhaps William James put it more accurately and wisely when he said that we can make two kinds of judgment—what he called causative and purposive or existential and evaluative. And science has its invaluable sphere in the attempt at causative and existential understanding.

The rigor of its method, as all such scientific writers as these agree, must be insistently applied as an attitude in every effort to understand and to verify. But that it of itself can pronounce upon value and significance is clearly out of the question. Thus the scientific mind may be and will be candid, tentative, experimental; but it cannot without inconsistency refuse to recognize the reality of unverifiable experience and must acknowledge gladly the narrow limits of its own knowledge relatively to the richness and protean character of existence.

Also, the scientific mind can function to good effect only with premises or hypotheses or purposes in view, which are themselves in the realm of value. It daily becomes clearer that to be "scientific" does not mean approaching a problem without preconceptions or assumptions. Mere assemblies of fact are not science and do not assure a science or scientific results.

Specifically in the field of "scientific management" as such, the application of this basic distinction is of great importance, and is, I believe, too little appreciated. What one is trying to do, what one is trying to "get at," why one is undertaking a given analysis, these are as vital factors in a situation as any others—indeed, more vital. And I venture that the social sciences as a whole at present suffer severely from an overdose of facts and a myopia on motives and objectives, which difficulty must be overcome before they will flower into mediums of real human illumination.

Or, put in another way, there is inescapably some rational hierarchy in human values, in the worthfulness of different kinds of human experience. And until factual studies in the human sciences can relate themselves in respect to judgments of human value to the way in which those facts are to be used and the premises underlying the kind of social values which are worth conserving, results will continue to be, as they now are, discouragingly slight. Our endowed agencies of social research have, for example, the potential power to do great things. In fact, they are largely as unrelated to the processes of change and growth as the light waves from Mars. Seemingly their notion of science is too small.

Similarly, scientific "economic planning," now much

mentioned, will be ineffectual and inconsequential till its factual content is seen in close relation to the human needs and social objectives which are expected to be served, and which must dictate the policy end if real benefit is to accrue.

In short, the great new area for scientific thinking is in the field of ethics and of human values. And until we know what we want and why, and realize its price, we shall not get very much farther toward a science of a highly human society. Yet the possibility does remain as a tantalizing will-o'-the-wisp, and in this way progress lies.

It is on this point that Professor Parker's book is particularly illuminating, and it is for this reason that I have grouped it here. The whole problem of finding and measuring and balancing among human affairs in terms of value is here treated in a modern, scientific and helpful spirit.

Finally, all of these books are urging two complementary things—the invaluable and indispensable role of the human reason, and the need of having reasoning verified by objective test. "The readiness to sacrifice our fondest hopes," concludes Professor Cohen, "in the single-minded pursuit of truth for its own sake is not without consoling consolations to a suffering humanity." He adds, "We need to learn to live in an uncertain world."

The whole concluding chapter of his book is eloquent with restraint and with the extraordinary intellectual honesty of this great scholar. "The great lesson of humility which science teaches us is the same as the lesson of all great religions, man is not and never will be the god before whom he must bow down."

The world which science reveals, whether in the inner recesses of the human spirit or in the vastnesses of the cosmos, is of humbling proportions and of stupefying complexities. But man remains (Northrop) "at once but an insignificant speck in a tremendous cosmos, and the created synthesis of every ultimate attribute of everything that is."

ORDWAY TEAD¹

Modern Economic Society. By Sumner H. Slichter, Henry Holt and Company, New York, 1931, pages xii, 909.

Here is a book on economics which accomplishes successfully what has long needed to be done. It presents a thoroughly sound exposition of the principles of economics and yet is a timely and readable discussion of those present-day problems which absorb the interest of the business man and citizen. The book was finished when the United States had already been in the throes of industrial depression for eighteen months, and the reader who wants an intelligent discussion of the questions which so much beset and puzzle him will find more help in this volume than in a whole host of hurried, amateurish books which are continually pouring off the press and whose principal justification is their "timeliness."

¹Editor of economic and business books, Harper & Brothers, and lecturer on personnel subjects, Columbia University, New York, N. Y.

Timeliness was the author's reason for writing this treatise on our modern economic process. He had observed, as so many of us had, that the most striking characteristic of modern economic life is change. This rapid development of economic life compels constant restatement of our subject. Yet economics lagged so hopelessly that the practical man in business, in the legal profession, or on the bench, constantly sought in vain in our books for answers to the problems which confronted him. All too often the economist had not yet had time to discover the new reality which change had created. So his books did not furnish answers to the questions which impelled the reader to pursue their pages.

In such a situation the seeker for light was impelled to turn to that mass of monographic literature which has been put forth by specialists in the various fields in such large volume during the last two decades. Now Professor Slichter has attempted to synthesize this mass of special literature and present a restatement of economics based upon it. He has been ten years at the task and the results are wholly successful. Anyone who wishes to put himself abreast of the march of economic process can do so by reading this book.

The work is dominated by the author's keen and vivid realization of the degree of change which has taken place in the industrial world during the last two centuries. In a single page at the very beginning of the book he draws a most arresting picture of this "Industrial Revolution" which is to him "the most important development in history since the disintegration of the Roman Empire."

The essence, the very kernel of the revolution has been the substitution of power derived from mineral fuels for the muscular power of men and animals in the production of goods. He sums up this introductory sketch by the statement: "We now possess in non-human sources of energy the equivalent of sixty slaves for every man, woman and child in the United States. Had a person living in 1700 known that two centuries later we should possess such great sources of energy, he would have been confident that economic problems no doubt would no longer exist."

Yet they do exist in amazing and distressing abundance. Why? And what can we do about it? The answer to these questions makes up the body of the book. It takes the author into a discussion of all those institutions and problems which are on everyone's lips today and which fill the public prints. There is neither time nor space here to discuss Professor Slichter's presentation in detail. It is clear, masterful and bold.

Its timeliness is evidenced by the fact that such a subject as the stabilization of operations of the Farm Board does not receive a cursory paragraph or two, but is treated with detailed and professional competence in a full-length chapter. The same is true of the tangled problem of international monetary and financial problems which have arisen out of reparations, the breakdown of the gold standard and the fall in prices, which have occurred during the last three years. Even the subject of a planned economy is discussed at some length and with refreshing balance.

This is a challenging book. It is challenging not because of flamboyant statement, either by way of criticism or new proposals, but because of the author's very honesty in his skepticism

concerning the adequacy of our present institutions to enable us to get the most out of the technological changes which the last two centuries have brought. He states the reasons for his skepticism clearly and thoroughly, with a fearlessness that entertains and stimulates and he canvasses the possible alternatives with an equal courage and thoroughness.

The book has an admirable index which increases its usefulness.

DAVID FRIDAY²

The Economic Consequences of Power Production.

By Fred Henderson, George Allen & Unwin, Ltd., London, 1931, pages 220.

Because I believe it comes nearest to getting at the truth concerning causes of the present depression and because it is brilliantly written and readable, I rate this as the best for the general reader among books which are concerned particularly with the causes of depression.

The American reader may be misled by the title. The book is not concerned with the production of electric or other power, but with the economic consequences of the use of modern high-powered equipment. The author purposely employs the term "power production" to emphasize the fact that modern machines so embody nature's powers that they have become a substitute for rather than, as in their earlier forms, extensions of man's muscles. It is the author's thesis that as a consequence the productivity of modern industry has become too great for the accustomed mechanisms of business to transform it into consumers' goods and thus keep up a sustained shuttle-like interplay of production-consumption forces. Periodically the distribution mechanism becomes jammed with goods and has to be cleared up by inactivity and price adjustments.

The basic assumption of the argument is that in a profit-making economy the values placed upon goods must equal the costs of their production plus profits; i.e., must equal salaries and wages plus material costs plus interest, rent and other overhead plus profits. Otherwise there are no profits. It is obvious that the recipients of salaries and wages do not receive purchasing power with which to take goods off the shelves at the values which this formula makes it necessary to place on them. Unless recipients of interest, wages and profits make up the deficit in the purchase of consumers' goods, all the goods cannot be sold at prices which cover costs. The interest, rent and profits group does not spend all of its income for consumers' goods because their share of the social income is greater than their needs for such goods. They invest a large proportion which is equivalent to putting it into new productive equipment. In an earlier day this investment was in undeveloped regions, such as colonies and the trans-Mississippi region, and did not have an immediate unfavorable reflex economic action on the regions providing the capital. Latterly, however, these undeveloped regions have offered less opportunity for investment—in fact have by investments been made into competitors on the world market—and new invest-

²Economist, Washington, D. C.

ment has been turned in on developed regions. The consequence is an increase of production facilities and of output of goods too great at the maintained prices put upon them for absorption by the purchasing power disbursed by the industry which creates them.

This line of reasoning will not be accepted by many who still think in terms of the economics of a deficit economy. But it should make a profound impression on all who base their thinking on the existence of a new surplus economy. Its beginnings were perceived years ago by Simon N. Patten and it has been realized during the past decade. The story is told in the Hoover Committee's "Recent Economic Changes."

Henderson's work is a diagnosis. He does not give us a program of action. That he leaves to each individual reader to construct for himself. But a program is implied by the analysis. It involves a balancing of production and consumption, which in turn involves revision of the distribution of social income, regulation of the rate of investment of new capital, maintenance of a widely-distributed purchasing power equal to the value of consumers' goods produced, and elimination of dread of economic insecurity so that the purchasing power will be freely exercised.

H. S. PERSON^a

A Planned Society. By George Soule, The Macmillan Company, New York, 1932, pages ix, 295.

Everyone who wants to know what economic planning means, why we are talking about it, and what it might involve in terms of ideas and structures, should read this book. Mr. Soule is to be numbered among a small group of American economists who refuse to have their thinking controlled or kept in compartments by labels and "isms." And this book is a notable example of a sincere, thoughtful attempt to consider the significance of planning with a mind untrammelled by preconceptions, but with a thoroughly socialized and modern spirit.

To me one of the most interesting phases of the book is its discussion of the process of social change and development. At an hour when economic dictatorship is urged by some and economic revolution urged by others, the analysis this book presents of possible alternative ways to progress is helpful to clarity and sanity. Also, Mr. Soule is clear that planning cannot proceed far without a profound popular change in sentiment regarding what industry is for. And he makes clear why he believes that the death knell of an individualistic and profit-motivated economy has probably already been sounded.

Mr. Soule seconds in a forceful way the recent pronouncements of the Director of the Taylor Society as to the value of the projection of the idea of scientific management into a field of national economic application. In short, this is perhaps the most important book on the fundamentals of permanent economic recovery to be published in recent years.

ORDWAY TEAD¹

^aManaging Director, Taylor Society, New York, N. Y.

Business Looks at the Unforeseen. By Wallace Brett Donham, Whittlesey House, McGraw-Hill Book Company, Inc., New York, 1932, pages ix, 209.

Perhaps the most significant thing about Dean Donham's second book is that he emphasizes the conclusion to which a number of recent writers have come. This conclusion is that, independently of the economic rehabilitation of the rest of the world, this country both can and must conceive of its own economic recovery as an internal national enterprise in which the basic objective is a high standard of life for its own people.

Dean Donham is in agreement with the essential theme advanced earlier by Mr. Lawrence Dennis in his stimulating "Is Capitalism Doomed?" in urging concern for measures of national welfare before trying to become involved with measures of international co-operation in economic fields where the disparity of interests is so great and so difficult to reconcile.

The book also includes a brief critical commentary on some of the recent programs of economic planning. But both here and in his own conclusions the author is content to leave his positive recommendations in such general terms that they offer few clues as to specific action. If in essence the book adds little to what was said in the same author's "Business Adrift," it is nevertheless true that his affirmative stand for a new conception of national welfare looks in the right direction.

ORDWAY TEAD¹

As I See It. By Norman Thomas, The Macmillan Company, New York, 1932, pages ix, 173.

This collection of articles and speeches has been gathered together and revised in an effort to bring up to date the position taken by the author in his recent book, "America's Way Out: A Program for Democracy." The numerous footnotes added in proof give evidence, frankly admitted by Mr. Thomas, of the difficulties attending such an aim in these changing times.

While the book gives us more of Mr. Thomas' always important thinking on many of the issues of the day, it does not increase the force and clarity of the earlier work. If one of its purposes is to add to Mr. Thomas' following in this year of presidential campaigns it is to be regretted that no specific "next steps" are given. Mr. Thomas stresses the urgency of the present situation but nowhere makes more practical the program of attack set forth in the other book.

One of the finest parts of the book is the chapter on "Disarmament and Peace" which gives the logical reasons for disarmament as a means to peace, analyzes clearly the national attitudes which stand in its way and states the prospects for some measure of success at the Geneva Conference.

If Mr. Thomas seems overscornful of present efforts toward economic planning, his reiterated plea for clarification of the purposes that must precede planning is worth heeding by those who are thinking along this line.

HELEN A. CARNES⁴

¹Taylor Society, New York, N. Y.

The Year of Regeneration 1933. By James C. Lawrence, Harper & Brothers, New York, 1932, pages xv, 220.

Here is something diverting in the way of solutions for our present dilemma! The author has indulged his flair for the fantastic and for economic prophecy and produced a work of fiction purporting to have been written in 1983 from the records of the Master of the Sons of Liberty, a secret organization—also a creature of his imagination—organized in 1931 to save the nation. Their work on President Hoover and the Congress with an amnesia and truth-producing inhalant, "veritol," brings about the resignation of the former and a vast body of constructive and unprejudiced acts on the part of the latter. The machinery of war is put to peace-time uses, citizens are "drafted" to suspend all work and services for eight hours and, following that, to go about the performance of stipulated tasks for the general good. An economic readjustment act and a new constitution are also results.

Under the heading "Selected Notes" the latter half of the book is given over to criticism of suggested panaceas. There is meat and stimulation (and much with which to disagree!) for the economist and statesman in these notes, which combine socially constructive ideas with the same fantastic quality which marks the opening tale. The style throughout is highly engaging.

HELEN A. CARNES⁴

Report of the Gold Delegation of the Financial Committee of the League of Nations. World Peace Foundation, 40 Mt. Vernon Street, Boston, pages 83. (\$.60)

This final report of the Gold Delegation of the Financial Committee of the League of Nations covering the gold standard and the purchasing power of gold, has caused much comment. The general conclusions concerning the gold standard are that it is desirable and that it should be restored at the earliest possible moment by the countries that have abandoned it. The report also urges the desirability of stability of prices and the purchasing power of gold, but at the same time repeatedly points out that the factors involved are so complicated that an enlightened economic policy must be depended upon to bring this about rather than a regulation of monetary matters.

The report is interesting in giving the individual views of such men as Professor M. J. Bonn, M. G. B. Roberts and Guido Jung. Albert Janssen, Sir Reginald Mant and Sir Henry Strakosch, signers of the report, give in detail their reasons for disagreement with certain fundamental issues presented. They support them with figures and charts which constitute a valuable supplementary report. Professor Gustav Cassel, who found it impossible to sign the report, gives his support to the statement of Janssen, Mant and Strakosch and at the same time briefly summarizes his own views. He lays great stress on the responsibility of reparations payments, combined with an unwillingness on the part of the receiving nations to accept payment in goods and services, for the breakdown of the gold standard. Certain essential conditions, which

are not immediately practical, would have to be fulfilled to make the restoration of the gold standard generally possible, and Professor Cassel makes clear his belief that the world's monetary problems must be discussed along broader lines than the Gold Delegation was called upon to cover.

HELEN A. CARNES⁴

Subject Index to the Economic and Financial Documents of the League of Nations, 1927-1930. By Eric C. Wendelin, World Peace Foundation, 40 Mount Vernon Street, Boston, 1932, pages viii, 190. (\$1.50)

This index comprising some 8,500 items has been prepared for the benefit of business libraries, economists, bankers, financiers and other students of world economic and financial problems.

In the past there has been considerable difficulty in locating the entire League documentation on a particular subject because of the fact that several League organs frequently deal with a single question. There has been need for an Index which would group under specific headings detailed references to all the various documentary sources pertaining thereto; for example, grouping under the heading "Double Taxation and Fiscal Evasion" references to treaties, conventions, bibliographies, Council resolutions, Financial Committee reports, Fiscal Committee reports, tables of international agreements in force, etc., etc.,—all dealing with the problem of double taxation and fiscal evasion.

The present Index covers the documents of the Economic and Financial Organization for the period 1927 to 1930, during which, beginning with the International Economic Conference in 1927, the League of Nations considered practically all of the major world problems of economics and finance. This wealth of material can now for the first time be used with readiness and ease.

The Social Aspects of Rationalisation. By the International Labour Office, World Peace Foundation, 40 Mt. Vernon Street, Boston, 1931, pages vii, 381.

The European conception of rationalization—the systematic effort to get the most out of all resources, human and material—became the guiding principle in economic development during the scarcity days following the War. A warning note was sounded, however, in resolutions of the International Economic Conference which met in Geneva in 1927. They stated: "It must be applied with the care which is necessary in order, while at the same time continuing the process of rationalization, not to injure the legitimate interests of workers; and suitable measures should be provided for cases where during the first stage of its realization it may result in loss of employment or more arduous work." In line with this statement the International Labour Office and the International Management Institute were asked to submit reports on rationalization. This volume, a collection of preliminary reports with the common objective of seeking to throw light on the social aspects of

rationalization, is the result. The effects of rationalization on output, hours of labor, wages, employment, industrial hygiene, accident prevention and other subjects are all considered. The conclusions reached are that rationalization has markedly increased the output of industry, both in general and per worker, reduced hours of labor and increased remuneration. It is admitted, on the other hand, that reductions in hours of labor and wage increases have been a stimulus to rationalization and that wage increases have tended to lag behind productivity increases. It is admitted that rationalization has involved a certain amount of unemployment, but it is held that this has been temporary only. The authors find it difficult to say whether work has been made more or less safe by rationalization. Influences have been at work in both directions, in other words.

A wealth of experience from many nations is embodied in this book.

HELEN A. CARNES⁴

Regulating an Industry. By Archibald H. Stockder, Columbia University Press, New York, 1932, pages xii, 159. (\$2.50)

This book was written in an attempt to throw light on the economic and social consequences of the Rhenish-Westphalian Coal Syndicate, that European cartel used by Germany as a model in planning the socialization of her basic industries. The material is presented under the following headings: (1) a brief history of the Rhenish-Westphalian Syndicate, (2) the regulation of output and its problems, (3) its market policy and regulation of distribution, (4) its price policy and (5) its labor policy.

The Holding Company. By James C. Bonbright and Gardiner C. Means, McGraw-Hill Book Company, Inc., New York, 1932, pages xv, 398.

Business and The Public Interest. By Benjamin A. Javits, The Macmillan Company, New York, 1932, pages xix, 304.

Administration and Management of Business Combinations, The International Management Institute, Geneva, 1932, pages 43, Appendix, xx.

These three volumes have a related interest in their consideration of corporate problems as they extend beyond the field of one operating unit. The holding company is considered as one phenomenon in the economic trend toward combination. In the second book, the trade association and its potentialities in relation to industrial planning are discussed. And the third volume is an analysis of different types of business combinations, from the structural point of view.

All three books suggest clearly that the problem of relating corporate effort to the service of the public interest is still far from a solution. They recognize the necessity for a changed public and legislative attitude toward the regulation and control of consolidations and trade associations.

The study by Professors Bonbright and Means is the first scholarly analysis of the social implications of the holding-company device, especially in the public-utility field. And the conclusion reached is that the public needs greater protection from the abuses of the holding company, presumably through federal legislation. This book should be required reading for every member of Congress.

Mr. Javits is arguing for a broadening of the present anti-trust legislation by including a provision that where combinations are acting in the public interest, they shall be considered legal. What such action in the public interest involves is considered in detail and the plan includes, among other things, a provision for profit sharing with employees and guaranteed employment. In a general way, although not in its details, the plan is comparable to the approach to this problem suggested by Mr. Swope.

The study by the International Management Institute is a purely objective analysis of the organization aspects and distributions of function in business combinations. The volume should prove of suggestive value to executives of business combines who are anxious to improve their method of internal organization.

ORDWAY TEAD¹

Modern Government in a Colonial City. By Luther Gulick, Jonathan Cape and Harrison Smith, Inc., New York, 1932, pages ix, 258.

Picture a small American city government—this time Williamsburg, Virginia (population about 2600)—as it was, as it is, and as it can be, and you have the idea of this remarkable study. It is a more pleasant and perhaps a more exact treatment of a particular city government than portions of the Linds' Middletown. It is less ambitious than Merriam's Chicago. It concentrates more on city government as an administrative task than as a political problem.

In 1930 the Institute of Public Administration of New York City made a thorough survey of the organization and finances of Williamsburg to serve as a guide to the mayor and council in dealing with the city's problems of management and planning. The results of the study are presented in this book in a most interesting manner by Luther Gulick, Director of the Institute. In the introduction there is a delightful historical survey by His Excellency, John G. Pollard, who resigned as Mayor of Williamsburg to become Governor of Virginia. And historically important, Williamsburg is destined to be one of America's shrines through the generosity of John D. Rockefeller, Jr. Incidentally this renovation of historical sections will have important bearings upon administration, such as the need for extremely good fire protection and proper provision for tourists.

The great value of this work is seeing the administrative problem as a whole and in so many cents and dollars. Every recommended administrative change or new service is followed by an estimate of the cost. And what is more important, this particular cost is related to all other changes and costs. The picture is like a completely balanced budget. Immediate needs are separated from long-time needs, and necessary from desirable improvements. Thus in each case the proposed change,

such as an up-to-date budget system, an assessment system, an accounting procedure, or a better water supply is outlined and accompanied by arguments.

The book is interesting to any student of administration. It contributes much to the rapidly developing literature in public administration. It is to be hoped that more cities will have such an effective guide to their council, executive officials and citizenship as has Williamsburg.

MILTON V. SMITH⁵

Forest Land Uses in Wisconsin. Report of the Committee on Land Use and Forestry, Executive Office, Madison, Wisconsin, April, 1932, pages v, 156.

This exhaustive study of the actual and possible uses of Wisconsin land is chiefly valuable in showing what one state is doing in intelligent land-use planning. It is recommended to all interested in this field.

Fifth International Congress for Scientific Management, Amsterdam, July, 1932. International Management Congress Committee of the United States of America, Room 1120, 29 West 39th Street, New York. (\$6.25)

A few sets of the complete papers presented before the Amsterdam Congress are now available. Contributions were made by representatives of many nations. Those in English cover accounting, budgeting, marketing, foreman training, promotion systems, collegiate courses in management, incentive wage plans in offices, stock turnover, dairy farming and many other subjects.

Principles of Organization. (As Applied to Business). By Henry P. Dutton, McGraw-Hill Book Company, Inc., New York and London, 1931, pages x, 315.

Our theories of organization go far afield in search of basic concepts to serve as cornerstones. Some lean heavily on biology, others on physics and still others on the terminology of a metaphysical psychology. The question of the analogy of organism and organization is not yet unravelled and for notions of structure the idea of parts in a mechanical whole is still in use. Motivation is still by "forces" of one sort or another.

The author of the present volume depends much on analogy for his organization theory and draws his illustrations and points of reference from a wide field. Basically his treatment of the subject is divided into three parts:

1. The Organization of Thought. Here he discusses both theoretically and practically the total thought background that must lie behind all large-scale organization. He also gives a general psychological treatment of the need and use for creative thinking in business.

2. Performance, or what might be called the application of thought. He discusses measurement, standardization, planning, division of duties and the function of the line organization.

3. The Organization of Will is the third major division of the book showing the relation of the individual to the group, his place in the group, group thinking and group decision, and finally incentive and discipline.

The theoretical discussions suffer for lack of reference to specific business practice and much of the social and psychological theory is too general. Our failure to date to define clearly such terms as management, administration, organization and their respective fields of reference is apparent in this work, since much of the content is regularly discussed in general works on "management" practice and personnel "administration" procedures.

JOHN J. HADER⁶

The Evolution of Industrial Organization. By B. F. Shields, Sir Isaac Pitman & Sons, New York and London, 1930, pages xv, 414. Second Edition.

For one who wishes a birds-eye view of past trends in industrial organization, primarily as it affects employer-employee relations, Professor Shields offers a pleasingly written survey. This second edition adds to the first, which was a series of lectures set forth in book form, a new chapter on trade unionism, more up-to-date statistics, and new sections on rationalization, consumers' co-operatives, instalment selling, and wage systems. The book is scholarly and judicious in tone, largely descriptive in method and historical in atmosphere, albeit not very exciting at a time when problems of the organization of industry have many alluring aspects.

Almost a third of the book is occupied by the first two chapters, pointing out "landmarks" of industrial development since the Middle Ages and different forms of business combination. The author duly notes the principle of interchangeable parts and the importance of the use of conveyors in modern production but understresses the significance of electric power in industry.

A rather scant and orthodox description of the scientific-management movement is followed by a rather long and equally orthodox account of trade unionism. A curious underemphasis here is the small amount of space allotted to unemployment insurance. Wage systems are dealt with in two chapters. In his consideration of piece rates, the author shows himself well aware of the importance of the human factor. However, the reviewer does not share even Professor Shields' mild enthusiasm for profit-sharing schemes. In discussing employee stock ownership in the United States, the author, though writing after "Black Thursday," 1929, in the stock market, ignores the implications of this debacle for such schemes. The minimum wage, chiefly in the experience of the British Empire, forms a chapter by itself.

Vocational guidance is pictured as a movement to help young people. Unfortunately the author does not consider its application to adult workers and its possibilities as part of vocational rehabilitation to ease the hardships of the newly christened "technological" unemployment. The two concluding chapters

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⁶Rockaway, N. J.

summarize developments in industrial education and industrial welfare work.

Professor Shields gives the reader in some measure a perspective of what has happened for several past generations. He assembles the gist of many specialized books, documents, and legislation, and his style is smooth. All this is valuable in its way, and perhaps that is all that should be expected in a book of this title.

To the reviewer, however, mere historical description seems inadequate. In organizing for more efficient production what have we learned to aid us to an organization for better distribution of commodities and income? In a book entitled "The Evolution of Industrial Organization," it would seem appropriate to give more attention (1) to pending organizational problems of industrial statesmanship—another term for the currently fashionable "economic planning"—and (2) to needed adaptations of our cherished institutions of private property, profits and "rugged individualism."

E. W. MOREHOUSE⁷

Efficiency and Scarcity Profits. By Clarence J. Forman, The University of Chicago Press, Chicago, 1930, pages xi, 343.

This book by Dr. Forman, Associate Professor of Economics at the University of Cincinnati, is not for the entertainment of the general reader in a leisure hour. In the Baconian classification it is a work to be chewed and digested. Unless the reader has the teeth and stomach of a theoretical economist probably he will masticate it imperfectly and his digestive processes fail to utilize all the nutriment. Indeed, he should be a ruminant and chew the cud.

But economic problems are tough. They are not materials for the tabloids, however much politicians and the populace discuss them as though they were. Let us get to the book. "This treatise," the author says in his conclusion, "is dedicated to the theory that the plane of competition should be preserved in American law and industry." And "Men must be converted to the cause of a rational competitive plane, be brought to see the crying need for the competitive principle, and be induced to take up the burden of seeing it established." The economic beliefs of the reviewer are so entirely in accord with this theory that he feels the book especially timely in this period of business depression when many minds entertain thoughts of economic planning without bringing to the formulation of their ideas the kind of analysis which this work shows.

Professor Forman considers the economic process in connection with the social instrument of the law through which the process is carried on. The endeavor to deal with aspects of the social organism as though those aspects were things in their entirety has perhaps reached the limits of its potentiality in approaching truth. Professor Forman adopts a newer and promising method. It is in line with the "Economic Foundations of Capitalism" by Professor Commons, who contributes a foreword to this book. Though one feels that the method has not yet been completely mastered, those who pursue it deserve praise for their courageous pioneering endeavor.

Chapter headings indicate the course of the discussion. They

are: (1) Introduction, (2) The Residual Surplus, (3) Dynamic Efficiency, (4) Profits of Efficiency, (5) A Contrast in Efficiency Profits, (6) Legal Profits of Efficiency, (7) Contractual Growth of Unearned Profits, (8) Profits of Exploitation, (9) Economics and Profits of Good-Will, (10) Computation of Good-Will Profits, (11) Conflicting Theories of Good-Will, (12) Legal Theories of Profit, (13) Similar Division Among Theorists, (14) A Synthesis of Elements, (15) Conclusion.

The author writes of scientific management to the extent of four and a half pages under the chapter "Profits of Exploitation." In spite of this classification the treatment is not at all hostile. He simply concludes that scientific management needs integration into the working out of that better competitive system which he desires.

HASTINGS LYON⁸

The Successful Control of Profits. By Walter Rautenstrauch, B. C. Forbes Publishing Company, New York, 1930, pages xvi, 239.

Like most business books of recent years, the publishers have selected an intriguing title that gives one little knowledge of what the book contains. If titles of this kind are necessary to awaken the imagination and interest of business executives, a more descriptive subtitle should be used.

Mr. Rautenstrauch's book covers all phases of cost and financial control for a manufacturing company. He outlines in detail the generally approved methods of today, intersperses frequent and sufficient examples to explain and amplify the text and also includes a few less generally known but effective methods of production cost control.

It is a book that will appeal to the student and junior executive as well as to senior business executives. At first reading it would appear that the author has tried to cover too much ground in one volume but the inter-relationships of the different chapter subjects is handled very carefully, so that one can read the book through consecutively or pick chapters for their pertinent interest.

"The Successful Control of Profits" has a preface by William C. Dickerman, president, American Locomotive Company, and an introduction by the author.

Chapter I, "Business in General," and Chapter II, "Business in Particular," deal with general economic and business situations and are necessarily broad and general in character. Emphasis is given to the character of the product, with relationship to consumption and manufacture.

Chapter III, "The Cost of Manufacturing the Product," treats with factory costs and expense distribution. The author speaks of the difficulty in terminology in discussing costs and defines his terms in simple language. The different methods of expense distributions with the pros and cons of each are brought out clearly.

Chapter IV, "The True Character of a Business and Its Relation to Costs," is summed up by the author in his statements, "The problem therefore for any particular business is to determine the proper balance of all factors which

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enter into the cost of doing business and to adjust these to varying conditions of sales demand and price fluctuations which arise from time to time," and, "The characteristics of a business must first be determined before it can be controlled."

Chapter V, "The Economic Characteristics of Manufacturing Enterprises," discusses variable and fixed costs and the development and use of "break-even" charts. This chapter would serve as a good handbook on "break-even" charts and their interpretation.

Chapter VI, "The Balance Sheet," and Chapter VII, "Measuring the Results of Operations," discuss the interpretation of balance sheets and profit and loss statements and introduce subsidiary operating statements, including a method of the author in "Measuring Operations in Terms of the Unit Man Employed at Direct Labor."

Chapter VIII, "The Budget," is comprehensive but too brief, although the author states in Chapter IX, "The Future," which concludes the book, "If I should pick out any one principle to be followed, I would pick out the principle of the budget as the most productive of all."

The "Successful Control of Profits" belongs in one's business library.

C. L. BARNUM^a

The Art of Business Reasoning. By H. G. Schnackel, John Wiley & Sons, Inc., New York, 1930, pages xxvii, 327.

This book is designed to supplement the author's earlier book, "The Art of Business Thinking." Special attention is paid to the value and methods of fact collection in relation to reasoning. The discussion of the tests of reasoning is interesting. And the reminders of the causes of errors in reasoning are suggestive. Much space is devoted to a presentation of the material usually found in texts on formal logic. Absence of illustrations and examples of the reasoning methods discussed is a real lack from the point of view of the business reader's use of the volume.

ORDWAY TEAD¹

Quantity and Economy in Manufacture. By Fairfield E. Raymond, McGraw-Hill Book Company, Inc., New York and London, 1931, pages xiii, 375.

This book is intended for that manufacturing planning executive who has to determine for each design of product that is processed in his factory the most advantageous size of manufacturing lot to process at one time. It deals not only with those factors that make for economy of those planning and preparation costs that are incurred but once for each lot and for each batch, but also with all those other costs and financial burdens, or disadvantages, that increase rather than decrease as the size of lot is enlarged. One of the most important of the latter is the increasing investment in goods in process and in finished goods and parts in stock, the slowing down of the turnover of the investment in these goods, and what may be called the interest loss attendant thereon or the tendency to minimize the rate of return on the increasing investment. Each factor is represented by a symbol; and the author's objective was to develop an improved formula that the planning

executive could apply to the measured facts relating to each specific design of product in order to determine for it the best size of manufacturing lot, all important factors considered.

A more definite idea of the problem dealt with by the author may be conveyed by an illustration out of the reviewer's experience. In a certain handkerchief factory, handkerchiefs were cut from the cloth in lots of about 2,000 dozens each; women's handkerchiefs were sent through the subsequent operations in batches (sub-lots) of 100 dozens, men's handkerchiefs in batches of 50 dozens, each. At each work place, as soon as work was started on one batch, another batch was delivered at the work-ahead position.

Now, consider the effect upon the investment in women's handkerchiefs in process. Of course, with any size of batch the investment increases as the batch progresses through operation after operation. If each handkerchief could practically progress individually, moving, as soon as one operation was completed, to and into the next operation, the handkerchief would become a finished product and the investment in it could be turned over and recovered through sale, delivery and collection, in the minimum time. Moving in batches of 100 dozens each with another 100 dozens waiting at each work place, the duration of the investment at each work place is multiplied by 2,400. This is a tremendous slowing down of the rate of turnover of the investment in goods in process. Furthermore, it also involves a tremendous multiplication of the amount of the investment in goods in process, to say nothing concerning the multiplication of investment in land, buildings and equipment for storage space.

It is not practical, however, to process each handkerchief individually. There is much planning to be done before each lot and batch can enter the first operation; there is the work of moving product from the place of one operation to the place of the next; and after the completion of each operation upon each batch there is an inspection report to be made, and there is work to be done in the planning department. This work is expensive; and the time and expense are no greater for a batch of 100 dozens than for a batch consisting of one handkerchief. In metal working and weaving there are also expensive special set-ups of machines. This expense, which is constant in amount for a batch, or manufacturing lot, is economized—its average per unit of product is minimized—by making the lots and batches large.

Thus there are two sets of factors, one making for large manufacturing lots, the other making for small ones. The problem confronting the planning executive is that of arriving at a size of lot for each design of product that will best balance the effects of those two sets of factors and thus bring the maximum ultimate economy, all factors considered.

The author addressed himself to the task of developing a general formula to which the planning executive can apply the specific data that pertain to a specific design of product. The book reveals that he devoted many years to the subject and became familiar with the practices and formulae developed in many manufacturing concerns of note, among them the General Electric Company. With the aid of symbols to represent the respective factors, the author has made a splendid analysis of the net effects of the opposing groups of factors. And he developed the formula. Indeed he developed at least two formulae. One is very complex, expressing the net effects of

^aCornell, Linder Company, New York, N. Y.

a multitude of individual factors. The other is, comparatively speaking, simple, neglecting many relatively unimportant factors that largely neutralize one another, but expressing the net effects of the dominant factors.

Because it bristles with symbols, this book will prove very difficult reading to the general economist; but it will be useful and valuable to the legion of planning executives whom the problem confronts.

THOMAS W. MITCHELL¹⁰

Problems in Sales Management. By Harry R. Tosdal, Ph.D., McGraw-Hill Book Company, Inc., New York and London, 1931, pages xxii, 968. Third Edition.

The six years which have elapsed since the Second Edition of this book was published have seen marked advance in sales-management methods in this country. This advance is reflected in the facts that only a few of the problems in the former edition reappear here, and that the plan and structure of the compilation have been completely revised.

The plan of the present edition includes eleven main divisions. The first presents problems relating to sales management as related to business enterprise as a whole. The second group relates to merchandising, a relatively new term which, in the sense employed here, has to do with the line of goods to be sold and their preparation for the market. This is followed by problems in market analysis, a part of sales management which has made very substantial advances in scope and substance since the 1926 edition was issued. The next four sections cover the types of management activity which are, to an increasing extent, being based on the collection of factual data rather than on the personal hunches, or the go-getting "wallop" of the sales manager. They include distribution policies, prices and terms of sale, sales policies and sales methods. The remaining four sections have to do with what might be termed management tactics or technique, as the preceding four have to do with strategy or policies. These latter four are concerned with sales organization, the management of the sales force, the filling of orders, and the control of sales operations.

Concerning the basic idea of expounding business principles by means of specific problems there can be no division of opinion. It represents a definite advance over formulated preachments developed by any human being, no matter how wise. As to the present state of the art, both for teaching, and for use in practice, the shortcomings are well illustrated both by this volume itself, and by this edition when compared with its predecessor of five years ago. The problems here are better stated as a whole than were those in the second edition, but some of the improvements suggest some of the limitations. The cases given, as a rule, are more explicit, and hence more useful. But this necessary expansion has resulted in a volume of nearly 1,000 pages. A book of that size unless very thoroughly cross-indexed by topics, as well as by names of cases, is a rather baffling source of help for anyone except its compiler, who may be assumed to be familiar with each case before it is used.

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It is a fair question whether a compilation of this sort would not be more useful if it were subdivided into two or three separate volumes on related phases of the subject. If this were done and the cross-indexing by topics more completely carried out, its value as a text for class-room use, and as a business hand-book, probably would be enhanced.

PAUL T. CHERINGTON¹¹

Management Control Through Business Forms. By Ladson Butler and O. R. Johnson, Harper & Brothers, New York and London, 1930, pages viii, 213.

It is difficult to determine just why this book was published though when it originally appeared in the form of a series of pamphlets it was effective advertising for a paper company. As a contribution to the literature either of management or form design, it has little value.

It is written in a popular reportorial style and consists largely of extracts from statements made by "important executives" on a wide range of subjects.

Its comments on management methods where they are not platitudinous are often confused. For example, in speaking of budgeting and budgetary control, the authors state that budgeting "should not be confused with mere planning, for budgeting involves the co-ordination of plans in a complete program."

The reader is also given the impression that the whole thing is easy, if you know how. Men who have spent their lives wrestling with business problems will especially relish this bit: "No special skill is needed to improve work methods along the lines suggested in this chapter. Common sense, a determination to see the job through and a knowledge of the business and personnel are about the only requisites."

Chapter III stresses the importance of measuring office work and then quotes a lot of so-called standards for comparison which are about what clerks would do in the average badly managed office.

There is much padding throughout the volume.

The last chapter contains the practical meat of the problem and so far as this reviewer is concerned, the book should have begun, as well as ended there.

W. H. LEFFINGWELL¹²

Les Graphiques—Moyen de Direction des Entreprises. (Graphics—A Means of Control for Enterprises.) By R. Satet, 68 rue Duhesme, Paris (XVIII), France, 1932, pages 64, figures 28. (15 francs)

This pamphlet by a member of the Taylor Society and le Comité National de l'Organisation Française presents by explanation and illustration all the various graphical methods of presenting facts which can be of use to organizations. A variety of materials and equipment is described in detail. The pamphlet also indicates, for each of the services of an organization, the graphical method which will best show

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¹²President, W. H. Leffingwell, Inc., New York, N. Y.

whether or not it is functioning properly. An extensive bibliography of books and articles—in French and other languages, including English—will be of interest to those who wish to make a further study of the subject.

Economic Survey of the Book Industry 1930-1931.

By O. H. Cheney, National Association of Book Publishers, New York, 1931, pages 336.

The opinion of one outside the book industry was asked in the review of this book or this reviewer would not have attempted it. Though this limits the appraisal and interpretation of facts and conditions within the industry, most of the problems and remedies presented run parallel to those of other industries. Their careful treatment gives an excellent opportunity for appraisal by an outsider.

The book fearlessly outlines the survey and its objectives and carefully covers various book development problems, including: Readers or Book Buyers; the Book, the Buyer, and the Critic; the Author and the Agent, Arts and Sciences of Publishing; the Publisher and Manufacturing; to the Point of Distribution; Bookseller to Reader; the Library as Market; Improving the Distributing Machinery; Reducing Wastes and Losses; Increasing Reading and Book Buying; Redistributing Burdens and Hazards; Improving Trade Relations; Accelerating the Flow of Money; the Immediate Program.

Numerous easily understood charts, tables and maps supplement the text, which represents diligent work, keen thinking and is excellently presented. Its material is well classified and logical and repetition of problems affecting various divisions of the industry only make it more valuable to users. Another valuable feature is a summary of problems and recommendations at the end of each chapter. It is rare for an industry to invite so careful a survey and those who conceived and worked out the task are to be congratulated. Because of its completeness and the method of presentation, this book should prove interesting to buyers of books who are interested in the quality they receive and, as consumers, in any merchandising plan. As to the sellers of books, single units within the industry should find it worth its cost. Details may be criticized within the industry but to this reviewer it appears that the object of the survey was achieved and that it is free from defensive prejudice or narrow criticism.

Because it treats every element of management from creation of product and financing to consumption, it compares favorably with many books written under the heading of management. The survey brings to light poor existing practices and suggests those that are sound and economical. In this day of supposedly good management there is a reluctance, on the part of executives and enterprises alike, to admit their failings and a lack of ability to adjust them. They accept the abstract principles of sound management as self evident and at times feel that this establishes their practice. On the contrary this way of thinking excludes real knowledge of sound management practices.

The chapter recommendations follow sound management principles and cover so much ground that they could well be reviewed as separate books.

Under quality the question is raised as to whether it is not

sound merchandising to know what is being sold. There can be little doubt that the prospective book buyer puts books and their content in the class with some advertising—empty of any real value. The survey states that "the practical function of criticism is to guide right readers to the right books and, incidentally, it guides the author through the problems of creation." The standards suggested for carrying out this purpose are quite complete.

Under mergers the disadvantages as well as the possible advantages are indicated with special emphasis on the difficulty of merging men. The author states that "facts are the only basis for management in publishing, as they must be in any field," and suggests ways of obtaining facts. "Management must not be confused with accounting or record systems," but must be a continuous influence based on facts, is another warning.

Planning also receives emphasis. The question is asked "Does this planning rob from publishing the bloom of inspiration and the spell of Literature? No—no more than planning the chapters of a book makes literature less inspiring or less an art. All technique—of every art—is essentially scientific. It becomes inspiration, second nature, conditioned reflex, only to the degree to which it is understood, absorbed and deliberately expressed. This applies to painting, music and poetry as well as to publishing."

Organization weaknesses, including those of principle, structure and co-ordination, are well treated. It is pointed out that the assets of the publisher are similar to those of other companies and that the same practice of attempting to deceive by carrying assets that are not real exists in this industry.

The chapter on distribution is especially provocative of the consideration of primary problems. It suggests that at present there is no real system of distribution in the industry.

Hand-to-mouth buying will no doubt remain with the industry. Like many others, it will learn to cope with this problem in an improved way, but this will only be possible when proper co-ordination has been developed.

Associations for the various divisions of the industry are suggested as a means toward the solution of its problems. No doubt considerable can be done in this direction but the question arises as to whether any industry can reconstruct itself without appointing someone to the specific task. This is a primary job that cannot be accomplished by some one in an operative position.

The summary of findings and recommendations in the last chapter is consistent with the thoroughness of the entire survey. The recommendations are given under the following headings:

Improving the Distributing Machinery: (1) bookstore rehabilitation, (2) integration of merchandising, (3) the improvement of wholesale distribution, (4) news outlets, (5) joint operating corporations.

Reducing Wastes and Losses: (1) a fact basis, (2) standardization and simplification, (3) better methods, (4) joint buying, (5) "Conserve Education" movement, (6) research, (7) promotion, (8) better guidance for reading, (9) simple books, (10) making readers into book buyers.

Redistributing Burdens and Hazards: (1) publishing control, (2) bookselling discounts and terms, (3) authors' royalties and advances, (4) manufacturing burdens, (5) personnel betterment.

Improving Trade Relations: (1) sane trade practices, (2) eliminating specific practices, (3) machinery for improving practices.

Accelerating the Flow of Money: (1) decentralized bank credit, (2) credit bureaus, (3) credit terms, (4) prompt payments.

The Immediate Program: (1) recommendations, (2) reviewing the program.

The entire work should give the industry a new concept for its production and marketing objectives, against which it can measure its present practice and from which it may develop its plans for improvement. No industry should reconstruct itself without a proper concept. This hardly ever checks with the existing or traditional concept of the business.

In reading this survey, the question as to whether the book industry understands merchandising repeatedly comes to mind. Are not books, at least in so far as the purchaser is concerned, in the mysterious product class? If this is true, to what extent is it the responsibility of the industry?

G. E. SCHULZ¹³

Policy and Ethics in Business. By Carl F. Taeusch. McGraw-Hill Book Company, Inc., New York and London, 1931, pages xi, 624.

Professor Taeusch prefaces his stout volume of more than six hundred pages with the candid statement of his purpose as "the study of the social control of American business and of the evolution in this country of a justifiable system of business ethics." The author at the outset wisely warns the reader that any economic analysis itself, as an adequate explanation in determining business behavior and social control, must be given its appropriate weight.

Starting with a study of the land, the early settlers and their ideas, the author points out such physical and social facts as have contributed to business behavior and demanded desirable social control. Size, diversity and complexity, variations and rapid changes are outstanding characteristics of American economic life. From these characteristics arise many of our most acute ethical problems. Sectional differences between East and West, North and South have brought in their train many perplexing problems.

In his chapter stressing religious and social ideas, the author points out the extraordinarily interesting relations between religion and business. America has been blessed, if one wishes so to regard it, with a large number of highly diversified religious sects. These sects have varied widely in different parts of the country according to type of people and locality. Where there has been conflict between religious behavior and business behavior, there has been no denying the survival of economic and business values.

From the standpoint of business ethics, the author's conclusion of some sixty pages devoted to the Sherman Law is that the most significant feature of this law is its "symptomatic indication of the fact that the law was viewing with apprehension the growing power of business." The law reveals an effort to conserve the political values in society against the encroachment of business. Those who at present advocate

the repeal of the Sherman Act may be interested to know that the author holds its retention "to be defended solely on the ground that it be a perpetual reminder to business that freedom from the law can best be achieved by proper self-government."

Almost one hundred pages are devoted to the problems arising from the extension of functions, mergers and the management problems arising from intra-company activities and out of inter-company affiliations. Here arise ethical questions emerging from the relations of shareholders' and directors' responsibilities and the relations between competitors and customers. The solution of ethical problems arising from these complicated relationships rests largely with the directors and large shareholders. Great responsibility for ethical conduct of our large corporations rests upon business leaders and the author believes this trusteeship is increasingly being appreciated by men of wealth and the largest stockholders. To see a developing business idealism on the part of those most blessed with worldly goods "is to witness a sign of the ethical soundness of business."

Chapter IX, "Legitimate Trade Channels," is one of the most important chapters of the book. It raises questions that "are pregnant with ethical problems." Ethical problems come up from the very roots of our business structure. Is there a business hierarchy? Is business as an organization analogous to State and Church? What about the relation between ethics and business personnel? Is business taking our best leaders from law, church, politics, science? Is this helping business to become professionalized? What about the ethical problems arising from the relations between banker, bond- and stockholders, directors and executive management? Every chain and integrated industry bristles with ethical problems arising between manufacturer, jobber, wholesaler, retailer and purchaser-consumer. Many business men and trade associations are now struggling with these problems.

The final section of the book takes up the interesting ethical problem of "self-regulation" in American business. Here are presented the urgent ethical problems of advertising, of cancellation of contracts, of limitation of production, of commercial arbitration as parts of the general problem of business ethics.

"The virtues of an abstract, complete and well-organized philosophy of business have been sacrificed to a concrete, inadequate and pluralistic point of view. The pick and shovel work that still remains to be done will be appreciated by all those who are not yet willing to inflict business with Jeremiads or apostolic blessings, and the clarion call to further work is sounding too loudly to warrant paying much attention to swan songs or paeans of praise."

HENRY C. METCALF¹⁴

Reducing Seasonal Unemployment. By Edwin S. Smith, McGraw-Hill Book Company, New York, 1931, pages xvii, 296.

Mr. Smith's book is the well compiled result of a timely study of the causes of seasonal fluctuations in business and

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¹⁴Director, Bureau of Personnel Administration, New York, N. Y.

of possible corrective steps suggested by the experience of a large number of leading industrial concerns who co-operated in the study. The study was instigated by a group of New England business men brought together by A. Lincoln Filene, chairman of the board of William Filene's Sons Company, Boston. The others were Henry S. Denison, John H. Fahey, Henry P. Kendall and J. Franklin McElwain. The group called itself a "Committee to Study Methods of Reducing Seasonal Business Slumps." They delegated Mr. Smith, who is in the employ of Mr. Filene, to record their proceedings and summarize the results of the study, a task which apparently he has very ably accomplished.

No definite formula or guaranteed cure is prescribed, but the fact that "hundreds of men of good sense and goodwill have turned their attention to the great problem of unemployment and are willing to have published in this book some record of their successes and failures in this first natural field of experiment—the mitigation of seasonal irregularity—emphasizes that those responsible for industrial progress and economic stability are confronted by a task which can be "neglected only at a peril not happy to contemplate." The humanitarian side of unemployment, tragically symbolized by soup kitchens, bread lines, family want, regarding which much has been said elsewhere—dramatically if not constructively—is not emphasized. Unhappy effects are subordinated to the search for underlying causes and practical remedial measures. The author contends that "unemployment is an expensive luxury in which modern business simply cannot afford to indulge." Business loses money by unemployment. When this fact is fully and generally realized by the heads of industrial plants, ways will be found to stop it and the humanitarian side of the picture will be brightened automatically.

The author estimates that of the 375,000 to 400,000 American industrial workers who annually face a period of seasonal unemployment of greater or less extent, very few are absorbed by other industries. Authentic charts are presented showing the seasonality of production and employment in a large number of industries.

The committee sent out 585 letters of inquiry and received 195 usable replies in addition to the data secured by interviews from 40 concerns. Their effort was to learn (1) why they have seasonal depressions, (2) what kind of losses they suffer, (3) whether the losses are sufficient to prompt remedial measures, (4) what remedial measures have been applied, and (5) with what success.

Three fourths, or more, of the book is an enumeration of specific cases, logically classified according to causes and the principal remedial measures. There is more or less discussion of the principal causes such as: effect of crop seasonality on food industries; climate and consumer demand; style; hand-to-mouth buying; tradition; effect of one industry on another; the summer slump; lack of dealer aggressiveness; etc.

Corrective measures that have been applied with more or less success by specific companies include: pushing sales in dull seasons by sales contests, new models, increased advertising, price concessions, etc.; creating out-of-season uses for seasonal products; diversifying the market, including

export to South America, where seasons are the reverse of ours; diversifying the product with the attendant risks that the new product may not be as readily sold or economically manufactured as anticipated, may develop peaks of its own or be subject to the ups and downs of consumer approval; advance ordering by retailers, from both the manufacturer's and the retailer's points of view, simplifying the line; budgeting of sales and production on a seasonal basis; manufacturing ahead of orders.

Attempts toward stabilization of employment for the individual worker are summed up in (1) training of versatile workers permitting transfer from less active to more active operations, (2) reluctance of worker to transfer, (3) maintenance of usual earnings when on temporary job, (4) transferring between industries to meet seasonal peaks that do not occur at the same time, (5) part-time employment, (6) shortening working hours.

The author concludes that the problem is reduced to two general aspects—seasonality of sales and seasonality of production. That something is being done to level out these irregularities is evident from the numerous instances where manufacturers in a wide variety of industries are successfully applying intelligence and imagination to their own individual businesses. Much worth while work for seasonal regularization has been done; vastly more remains to be done. We are getting somewhere if the author is correct in his closing assertion that "unemployment is coming to be more and more thought of as a preventable evil."

S. M. LOWRY¹⁵

Seasonal Variations in Employment in Manufacturing Industries. By J. Parker Bursk, University of Pennsylvania Press, Philadelphia, 1931, pages xiii, 197.

This careful and painstaking study by Mr. Bursk should be of great value to many business executives. It reveals many important facts and contributes a wealth of information concerning seasonality in industry. The data were taken from the reports of the Biennial Census of Manufactures of the United States Department of Commerce for the years 1904, 1909, 1914, 1919, 1921, 1923 and 1925. Earlier years were not included because of the lack of comparable data, and no tabulations of monthly employment for 1927 and 1929 were available. Detailed analyses are made of 99 industries, grouped under the census designation: food, tobacco, textiles, leather, rubber, iron and steel, machinery, transportation equipment, non-ferrous metals, stone, glass, clay, lumber, chemicals, paper, printing and a number of others.

Mr. Bursk spends little time in discussing the statistical methods of measuring seasonal variations. The major emphasis is placed upon the annals of seasonal variations—a study of the actual seasonal fluctuations in industry. No extended analysis is made of the *causes* of seasonal variations. Where causes are mentioned it is largely for purposes of suggestion. The two most important causes given are climate and custom.

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In the body of the treatise each industry is taken up separately, and the following facts presented:

1. The census designation of the industry and a short description of manufacturing processes.
2. The computed monthly index of seasonal variation in employment (in relative form).
3. The graph of the seasonal index showing the yearly pattern of employment.
4. A subgraph showing the dispersion of the individual seasonal relatives about the seasonal index.
5. A descriptive statement of the monthly seasonal changes.
6. A comparison with similar studies of employment previously made where the industrial divisions were similar.

In the concluding chapter the author presents an interesting estimate of the amount of unemployment resulting from seasonal fluctuations (p. 183). He concludes that the industries examined have "an annual labor turnover of 14 per cent as a result of seasonal factors." He submits some evidence to the effect that those industries employing a larger percentage of female workers have, probably, a lower seasonal range in number of employees. His figures also seem to indicate that enterprises with a larger number of employees have a tendency toward a lower seasonal range in employment.

The form of presentation is such that an individual manufacturing concern can pick out the charts which apply to its own situation. The organization and arrangement have a unity that is of great value. Criticism, however, may be ventured on the ground that the *causes* of seasonal fluctuation are not analyzed with sufficient thoroughness. The reviewer hopes that, in a subsequent study, Mr. Bursk will attempt to remedy this deficiency.

CHARLES S. TIPPETTS¹⁸

Personnel Problems. By Felix E. Baridon and Earl H. Loomis, McGraw-Hill Book Company, Inc., New York and London, 1931, pages x, 452.

This book presents a distinctive difference from many others on the subject of personnel administration. Its material is more selective, more carefully organized and more particularly useful.

These results automatically flow from the clear-cut and restricted aim of the authors to provide "guidance in the *method of attacking*" the major personnel problems common to all employers. Instead, then, of a sea of data in which the reader is too likely to find himself adrift, Mr. Baridon and Mr. Loomis have made available a "road map for the personnel fraternity in considering the route to a specific destination."

Eight general problems, presented by Employment, Remuneration, Maintenance of Working Force and other aspects of personnel work, constitute the framework of this book. Each is stated in terms of a two-fold objective, that of management on the one hand and human relations on the other. For example, the general problem of Employment is stated thus: "To secure the right kind of employees for the jobs to be filled—to place new employees in the work for which they are best suited," and that of Employee Progress: "To meet the job requirements of the company by adapting the personnel

available—to assist employees to secure the full benefit of their potentialities."

The discussion of most of these eight general problems follows a standard pattern composed of the following five topics: (1) types of minor problems that arise in attaining the stated objective, (2) sources of data that are available as aids in the solution of the minor problems, (3) means of gathering or maintaining the data, (4) use of such data in shedding light on the solution, (5) precautions to be observed in the use of personnel data.

As may be inferred from these topics, the text abounds in suggested definitions, classifications of data for various purposes, forms and formulae.

As for the writing, it is succinct, clear and generous in its use of outlines.

All in all, "Personnel Problems" most adequately meets the objectives set for it by its authors. More than this can be expected of no technical book. To Mr. Baridon and Mr. Loomis the solution of the personnel problems inherent in present-day industry is dependent first and foremost upon competent analysis and control. Finding in connection with their own work no satisfactory publication on the "how" of securing such analysis and control, they decided to produce one themselves. In doing so they undoubtedly have made available to the reader the results of their own very real experience.

MARY LA DAME¹⁷

Readings in Industrial Psychology. By Bruce V. Moore and George W. Hartmann, D. Appleton and Company, New York, 1931, pages xxxix, 560.

A Scientific Approach to Labor Problems. By Adelbert Ford, McGraw-Hill Book Company, New York, 1931, pages x, 446.

The growing literature on the application of psychology to industry is a most promising feature of the past decade. It is, of course, obvious that here as elsewhere there is a tendency to get aboard the bandwagon as it goes by. The personnel movement took over the welfare movement and now it looks as though industrial psychology showed signs of taking over personnel administration.

The above two books cover much the same ground, though the method of presentation is quite different. The former consists of excerpts from over one hundred different authors, several of them frequently quoted, while the latter work is the writing of a single person based on his own research as well as that of others. Both books have arranged the subject matter generally in the sequence from the selection of an employee through his various experiences of interview, testing, placement, training, fatigue, monotony, maladjustment, etc. The Moore and Hartmann book concludes with a section on advertising and sales psychology as well.

Moore and Hartmann have, as they say, refrained from emphasizing one point of view; their basic idea was to produce a text showing the general scope of industrial psychology. But the limits of their conception of this applied

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¹⁷New York, N. Y.

science have been extended sufficiently to include many employment-office and personnel practices.

Ford's book is more definitely a work on the techniques of labor administration and the last half of it devotes attention entirely to the use of statistics as a tool in what the Germans more adequately call the psycho-technics of industry.

For this reviewer, however, both works raise the question of the fundamental content of an industrial psychology and the features of a pure-science psychology it is to apply. It stretches matters somewhat to call our little testings and samplings "psychology" and the subjective content of our questionnaires and ratings hardly merits their being called "scientific." It is true that both of these volumes are best in such well established studies as fatigue and monotony, and no doubt there is good methodological reason for this. But the content of industrial psychology when left to the "dictates of empirical science" is bound to be uneven and variegated.

Particularistic approaches, though they may lead to excellent work in isolated phases, can never give us a completed picture of a whole; that is, the human being in industry. Just as Elton Mayo has so frequently mentioned the "total situation" for any particular study or research project, it must be considered that there is a total situation for the whole science of industrial psychology. Our particular researches get their premises out of the immediate needs of a situation, say greater production, but a psychology for industry as a whole cannot be bound by the immediate fashion in economics; it must go deeper into a more universal economy.

JOHN J. HADER^a

Human Engineering. By Harry Myers, M.D., Harper & Brothers, New York and London, 1932, pages viii, 318.

Workers' Emotions in Shop and Home. By Rexford B. Hersey, Research Studies, XVIII, Industrial Research Department, Wharton School of Finance and Commerce, University of Pennsylvania Press, Philadelphia, 1932, pages xviii, 441.

These two books represent very different types of literature purporting to deal with human engineering.

That broad field is defined by the author of the first book as "the generation, the transmission and the application of power." But in this analogy to mechanical engineering he seems to overlook the fact that the latter is based upon a scientific study of the laws underlying phenomena with which it deals. His book, which is reminiscent and anecdotal in method, adds little to scientific knowledge of the generation, transmission and application of human power.

The ease with which it disposes of difficult problems is exemplified by his main thesis: "If everyone did his work right and managed his affairs properly, everybody would have all the money he really needs, and the world would be rid of much of its sickness, most of its accidents, and all of its burdensome debts and poverty." The rest of the book rings changes upon the proposition that doing one's work right consists of adhering to the following six rules, typical of the author's style and point of view:

1. Be clean and orderly.
2. Take good care of property, equipment and materials.
3. Follow instructions carefully and continually.
4. Work well from starting to closing time.
5. Work every day and tell your boss when you cannot.
6. Work well with others.

Mr. Hersey's book, in contrast, shows that the objective, questioning attitude of the physical scientist can be applied to the study of human work. Starting out with preconceptions he went into a repair shop of the Pennsylvania Railroad Company to study, by means of observation, interviews and laboratory measurement the actual day-by-day functioning of a group of workers in their job environment.

The report of this study is divided into three parts: Part I, an introduction describing the purpose of the investigation and the shop in which it was conducted; Part II, case stories of the eleven individuals studied most completely; and Part III, tentative conclusions as to relations between happiness and work. There is an appendix of interest to investigators in this field, giving the methods, detailed tables of data and a bibliography of about a hundred references.

The significant contributions of the study are the methodology and the evidence of cyclical variations in workers' emotions, not dependent on external conditions, but affecting zest for work and productivity. Mr. Hersey suggests that these fluctuations throw doubt on the advisability of demanding a mechanical regularity in production (Dr. Myer's rule 4) or 100 per cent attendance (Dr. Myer's rule 5).

Instead of setting up six rules of good work, Mr. Hersey suggests, on the basis of his analysis of individual workers, a series of factors involved in satisfactory adjustment of work, home and play. These are: a congenial job; sound working conditions; security; satisfactory remuneration; justice, equality and independence; understanding and efficient supervision; favorable personality factors; co-operation and consideration within the family circle; ability to live within income; variety and change (a little excitement); sane and healthful recreation; and satisfactory sex relationship.

His generalizations of course require verification with further cases, and it is to be hoped that it will be possible to study further the correlations between the conclusions from observation and interviews and such data as physiological measurements and scores in standard tests and questionnaires.

The book is carefully and clearly written, and very readable. It should prove of interest to all who are desirous of working out a foundation of scientific information for the practice of human engineering.

ELEANOR G. HAYES¹⁸

Educational Experiments in Industry. By Nathaniel Pfeffer, The Macmillan Company, New York, 1932, pages 207.

In his "Educational Experiments in Industry" there can be no doubt that Mr. Pfeffer has performed a valuable service to industrial management by the clear and concise outline

¹⁸Psychological Investigation Department, Hawthorne Works, Western Electric Company, Chicago, Ill.

he has presented, first, of the need of education in industry, and, second, of some of the many forms in which such opportunities are made available to the workers.

The book is based on a wide study of the subject. As the author says, "It does not cover the field but gives an idea of what it is like." Quite evidently that is all that is practicable but it is at the same time sufficient to evaluate the extent to which management is performing its teaching function.

The main premise of the book is that some training is necessary for "industry, even machine industry, does require skilled men." The author then examines in some detail a number of ways in which training is provided, giving the names of the concerns or associations. His manner of illustrating his points by taking specific cases is very satisfactory.

The discussion is first centered around the prevalent idea that the workers should be taught by their foremen, which means that the foremen must first be taught how to teach and then be followed up to see that they do it. The methods of the Western Electric Company, the New York Telephone Company, the Standard Oil Companies, R. H. Macy & Co., Inc., the Equitable Life Assurance Society are among some of those discussed. The point is brought out very definitely that there is no standard for all concerns but that each must develop the method which applies best to its own conditions.

Mr. Peffer's interesting way of presenting his findings is nowhere better illustrated than in explaining the experience of W. F. Schrafft & Sons, beginning on page 98. He tells how this company has a labor turn-over of 5 per cent when the average for candy manufacturers is more nearly 150 per cent. Here the workers are permitted to go to school while working, either in continuation classes or on the basis of one week in school and one week of work. Care is taken that the school work has no relation to the factory work. The results are much better, in this company at least, than when direct training for the job is given. By taking up striking experiences like this at various points in his discussion the author not only makes what he has to say very interesting, but also shows that in dealing with the human equation the unexpected and unorthodox is always happening, so that it is never safe to be dogmatic.

Of course the formal schools such as those of Westinghouse and Ford receive attention and the joint efforts through associations such as the American Institute of Banking, the National Metal Trades Association and others are described. Public trade schools as conducted in different states are described and it is surprising how much they differ in different sections of the country. Undoubtedly the most original, and perhaps the most promising is the "Denver Opportunity School." Providing the means of adjusting the emergent adult to his job is as much a part of education as teaching him reading and writing is their belief.

In conclusion it is pointed out that "for the great bulk of industrial and commercial workers nothing is done by way of education by the corporations or individuals who employ them."

Much of the existing work is done in the dark, showing a great need for careful study.

FRANCIS A. WESTBROOK¹⁹

Labor Agreements in Coal Mines. By Louis Bloch, Russell Sage Foundation, New York, 1931, pages 513.

To me the most significant thing about this book is the fact that it substantiates the studies that have already been made about the possible stability of the administration of labor agreements as reflected also in the men's clothing industry and among the railroad workers. This book is an intensive study of the administration of collective bargaining in the bituminous coal industry in Illinois. And as such it offers conclusive evidence that under wise and patient handling, it is possible to build up a method of negotiation and a set of working principles and precedents that will enable collective agreements to stabilize employment relations, even in an industry where working processes and conditions are highly complex. This book sustains the contention which many students of industrial relations have long advocated, namely, that it is possible without an excessive addition to overhead to build up a machinery for administering the relations between organized employers and organized employees in a way that makes a genuine and effective fact out of the phrase, industrial government.

In an industry as disorganized as bituminous coal in this country today, it is gratifying to see what can be done in the orderly conduct of labor relations even in one small segment of the industry. It should offer an object lesson as to the ways and means by which, under a strong national body of employers and of workers, it would be possible to apply such a plan to a more comprehensive scheme of industrial government for the entire industry.

ORDWAY TEAD¹

Industrial Hygiene for Engineers and Managers. By Carey P. McCord, M.D., Harper & Brothers, New York, 1931, pages x, 336.

It is unusual for the material, included in this volume, to be reviewed in such a way that factory executives with its assistance can form their own opinion on the problems of industrial hygiene for their employees. This is possible because of the able manner in which the material has been classified and presented. The medical and technical questions are made elementary, the stress being made on factory systems, which are recommended to be directed, if possible, by technically trained men. The necessary qualifications and duties of these men, particularly the physicians, are so well described that any one man's usefulness to industry could be adequately estimated. There is a wealth of information, which has been industriously collected from recognized sources, on the problems, which are new to most industries, such as industrial fatigue, human conservation and utilization of handicapped men. These subjects, of great importance to industries, have had so little literary comment in such publications as factory executives ordinarily see

¹⁹Consulting Engineer, Center Conway, N. H.

that this could well be reviewed by any executive, personnel director or engineer to great advantage.

There is included in this book a list of 507 materials used in industry, which produce occupational disease hazards together with the symptoms and results of exposure. It is arranged in such a manner that any manufacturing material can readily be investigated for the purpose of providing protection. The trades are cross referenced in order that a man unfamiliar with investigating these hazards can readily find out what exposures are dangerous to his men. Standards are also given for such ordinary factory safety and hygienic problems as sanitation, drinking water, stairways and steps, cafeterias, washing and bathing facilities, light, ventilation, heat, mutual benefit associations, etc.

In conclusion, it seems that while the book is of value as a reference book to check on conditions already present in the plant, its greatest value to the engineers and managers for whom it is written is to demonstrate to them the advance in industrial hygiene and to set a high standard for further practice and in doing so to improve the environment of the workers as well as to give them the opportunity to live happily and enjoy the fruits of their labors by knowing more about themselves through investigation and advice by the employer.

WILLIS C. TEMPLER, M.D.²⁰

Medical Supervision and Service in Industry. National Industrial Conference Board, Inc., New York, 1931, pages xi, 125.

The Conference Board performs a valuable service in keeping up to date its studies of medical service in industry and it is especially useful that the present study should emphasize the development of this type of work in small plants where the problem has, until recently, been relatively ignored. It is gratifying to see the trend toward fewer rejections, more preventive work, increase in the amount of periodical re-examination and increase in the time taken per examination. The average cost per employe has also continued to rise, indicating an extension of the services made available.

Any company operating a medical department or contemplating this will find this study of great practical service. Industrialists too often tend to forget that sickness appears to account for at least two or three times as much lost time in industry as accidents.

ORDWAY TEAD¹

Education for Business. By Leverett S. Lyon, The University of Chicago Press, Chicago, 1931, pages xvi, 586.

An immediate reaction of satisfaction and enthusiasm was experienced in reading this well-directed discussion of education for business. The unquestioned need of a research of this nature has been largely fulfilled by Mr. Lyon's splendid work, his frank discussion of present-day curricula, and his approach to the solution of educational problems is so

well done that this volume should unquestionably be not only useful but almost necessary in the arrangement of both high-school and college courses.

The simple but well-worded style should appeal to the student of business and of business education as so often similar volumes are so technically involved that the average student loses a large part of the value of the book.

The profusion of tables and charts gives proof of the excellent work of assembling the essential data and is helpful to the reader in quickly grasping the subject matter.

The analysis of the history of education and its application to present-day education is especially well done and the recognition of the value of the business college, the correspondence and the commerce schools, both in advantages and shortcomings, is refreshing.

The discussion of "Company Training" is candid and faces the advantages and scope squarely in a way that is not often encountered. Due credit is given to corporation education. Also the quantity of information gathered on the real demand of education for business indicates the author's appreciation of business needs and overcomes the usual one-sided theoretical discussion.

The summary of "what shall be done" is without a doubt the best approach to the solution of the problems of education that the reviewer has encountered. Present business conditions indicate the need for a renewed interest in education and certain educational policies. This has been largely anticipated by the author and the serious consideration of these suggestions and the information presented by this volume should be used in the much needed reorganization of educational methods.

M. M. BORING²¹

Education for Business Management. By James A. Bowie, Oxford University Press, Oxford, 1930, pages viii, 200.

In his book, "Education for Business Management," Professor Bowie has outlined what he believes to be the place of the study of business management in the educational program of the institutions of higher learning. His views are well summarized by the statement that "only if industry is exhibited in its social setting can it be administered as a serious study for youth."

The author analyzes the changes that have taken place in the structure of business and industry during the past decade and suggests certain essential qualities of leadership which are necessary for the successful manager of tomorrow. He then offers the bases of an educational plan which will enable the school to give the greatest assistance in the training of these new executives. His proposals are well illustrated by the following quotation.

The purpose of industrial education is to enable those who receive it to sustain their part in the national life, in forming public opinion, and in showing example and wisdom and a generous spirit in their economic life. Industry

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